

Biology 122 Human Genomics/Genetic Engineering Research Paper

Research and demonstrate an in-depth understanding of a current technology in genetic engineering and the ways in which they are applied in various disciplines (e.g. in medicine, forensics, food production).

DRAFT DEADLINE: _____

FINAL DEADLINE: _____

Format: 4-5 pages typed, double spaced, Times New Roman, 12 point

Draft Package:

- Hand-written notes, brain storming, concept maps, outline etc.
- First *typed* version including citations.
- **SELF-CHECK: Essay model and checklist numbers clearly indicated on draft.**
- The final paper cannot be evaluated without the draft being seen first.

Referencing: APA (Microsoft Word will do this automatically)

Contextual Support: **minimum** of 4 authored sources (Miller-Levine not included)

Evaluation:

- Refer to 'Evaluation Criteria'.
- This paper is roughly equivalent to a major test in weight.
- Not only is this a research paper, but an exercise in the writing process. You will be evaluated on the growth evident from your draft to your final paper.
- ***Therefore this paper cannot be evaluated without a reviewed draft.***

Please note that a loss of up to 40% could result if:

- There is improper or lack of referencing/works cited.
- No draft accompanies the final paper.
- The paper is late.
- Plagiarism occurs.

Topic Ideas:

- How, when and why was the Human Genome Project undertaken, and how will it be used?
- What is the "thrifty gene hypothesis" and what evidence has been used to support or reject it?
- What is the "sudden death gene" identified in Newfoundland families, what is ARVC5, and how does it affect the heart muscles? What is the treatment for it?
- What are the breast cancer genes (BRCA1, BRCA2)? How much does it increase a women's chance of getting cancer? What are the implications and what should her response be on identification of the gene?
- What are the implications of somatic cell gene replacement therapy in the treatment of human genetic disorders?
- Should individuals be allowed to trademark their DNA?
- Research scientists' search for naturally occurring genetic deviations in organisms that have resulted in disease resistance or other beneficial features.
- Research the production, patenting, use and labeling of genetically modified foods now available (e.g. soy beans/corn, Nuleaf © potato, triploid salmon in NB, Thompson seedless grapes), and the extent to which it pervades the food industry and to which people are aware of its use.
- Research the production and use of genetically modified microorganisms (GMO) for drug production, pollution clean-up, environmental monitoring or mining.